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HUET'S PROVISIONAL SPECIFICATION. (1 SHEET)

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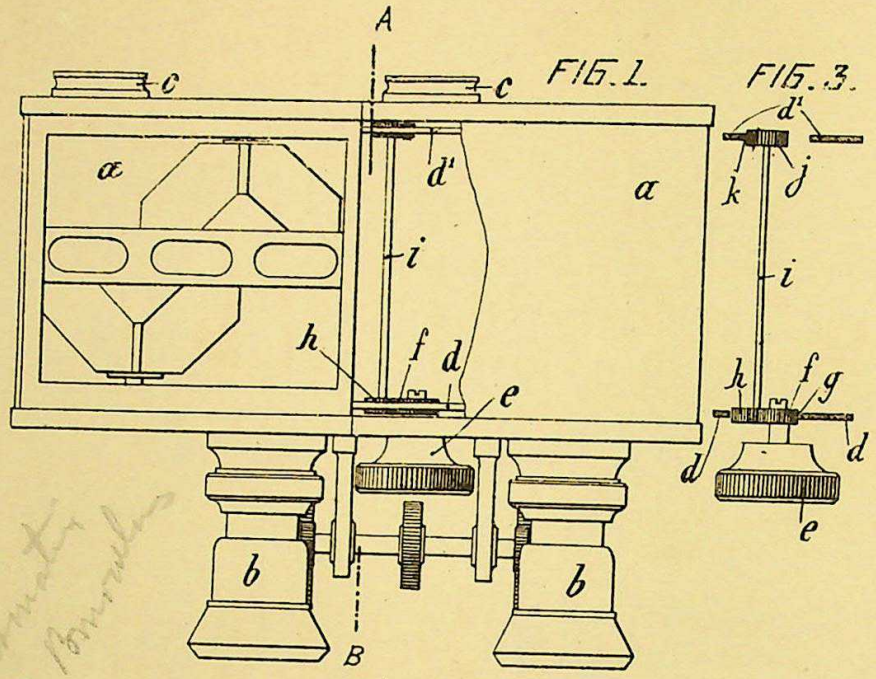

FIG. 1.

FIG. 3.

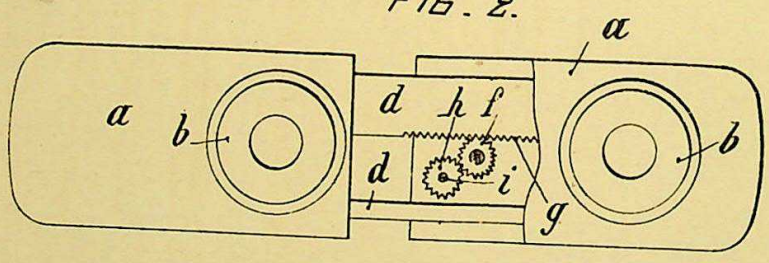

FIG. 2.

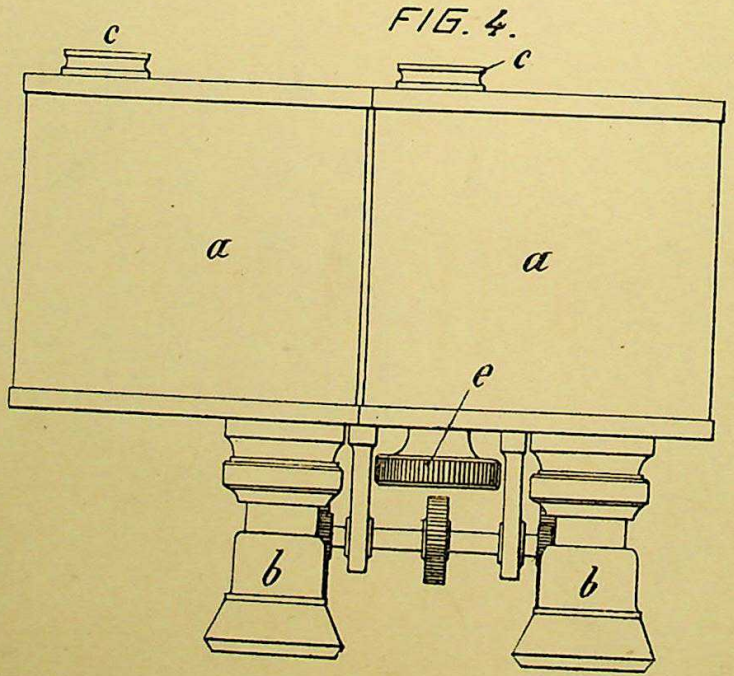

FIG. 4.

[This Drawing is a reproduction of the Original on a reduced scale.]

See (Br) 135,752 359/76

Malby & Sons, Photo-Litho.

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N° 256 A.D. 1900

Date of Application, 4th Jan., 1900

Complete Specification Left, 22nd Sept., 1900—Accepted, 3rd Nov., 1900

PROVISIONAL SPECIFICATION.

Improvements in Binoculars.

I, Henri Louis Huet, of 114, Rue du Temple, Paris, France, Optical Instrument Manufacturer, do hereby declare the nature of this invention to be as follows:—

My invention relates to a binocular of novel construction and has for its object to furnish an optical instrument combining great power with small dimensions.

In certain types of binoculars in which prisms are employed, the optical combination necessitates the displacement of the optical axis and the doubling of it on its self in order that the length of the instrument may be reduced as much as possible, but this displacement of the optical axis has for effect to increase the breadth of the instrument and so render it cumbersome, its dimensions not permitting of its being carried in the pocket.

In the ordinary type of binocular, the two eye-pieces as well as the object-glasses are symmetrically arranged with respect to the axis of the instrument, so that the instrument is always constituted by two barrels symmetrically disposed relatively to said axis, a vacant space being necessarily left between the two barrels owing to the distance separating the two eye pieces.

My invention consists in a novel construction of binocular in which the position of the eye pieces and object-glasses is such as to enable the size of the instrument to be considerably reduced.

According to my improvement the two halves of the instrument are not symmetrical but on the contrary are identical, the eye piece and object glass in each half being diagonally opposed to one another and occupying the same relative positions, *i.e.* the diagonal displacement being towards the same side in both cases. This construction permits of uniting the two halves of the binocular while still preserving the desired distance between the two eye pieces and thus considerably reducing the size of the instrument owing to the space between the two barrels being saved.

My invention is illustrated by way of example in the accompanying drawings wherein Figure 1 represents a sectional plan view of a binocular provided with separately adjustable eye-pieces. Figure 2 is a face view of the arrangement for regulating the distance apart of the eye-pieces. Figure 3 is a longitudinal section on line A B (Figure 1). Figure 4 is an external plan view. The same letters of reference denote like parts in the several figures.

The instrument comprises two exactly similar bodies *a* in each of which the eye-piece *b* and object-glass *c* are diagonally opposed and occupy the same relative positions, in other words the displacement or eccentricity of the object-glass relatively to the eye piece is towards the same side in both cases instead of being symmetrical with regard to the axis as in types of existing binoculars in which the optical axis is displaced. This arrangement of binocular is adapted for employment with any suitable optical combination, but it is preferably em-

[*Price* 8*d*.]

ployed with the system of tetrahedrons forming the subject of previous Letters Patent No. 9805 of 1898.

The two half bodies *a* may by this arrangement be joined or more or less closely connected together so as to permit of utilizing the breadth of one half-body for containing the mechanism for adjusting the distance apart of the eye pieces, for which purpose the one half-body *a* is provided at each end with rack bars *d*, d^1 fitted to slide within the other half-body. This lateral adjustment of the eye-pieces is effected with the aid of a milled head *e* upon whose spindle is keyed a pinion *f* gearing with rack teeth *g* formed on the upper member of the front rack bar *d*, and also with a pinion *h* mounted on a shaft *i*, upon whose opposite end is keyed a pinion *j* gearing with rack teeth *k* formed on the lower member of the rear guide bar d^1. The spindle *i* and milled head *e* by which it is operated are both mounted on the one half-body *a*, while the guide bars *d*, d^1 are mounted upon the other half-body, so that by turning the milled head *e* the distance apart of the eye-pieces *b* may be adjusted to suit that of the eyes.

The focussing of the eye-pieces may be effected either separately for each eye-piece or simultaneously for both eye-pieces as shewn, in which latter case one of the eye-pieces may be rendered separately adjustable so as to permit of compensating for any difference in the sight of the two eyes.

It will be observed that in this improved binocular, owing to the relative positions of the eye pieces and object-glasses the luminous rays will always be directed in parallel planes.

The form, dimensions and details of arrangement of the binocular as well as the optical combination employed may be varied to suit the particular circumstances in which the invention is applied.

Dated this 4th day of January 1900.

A. M. & WM. CLARK,
Chartered Patent Agents, 53, Chancery Lane, London.

COMPLETE SPECIFICATION.

Improvements in Binoculars.

I, Henri Louis Huet, of 114, Rue du Temple, Paris, France, Optical Instrument Manufacturer, do hereby declare the nature of this invention and in what manner the same is to be performed to be particularly described and ascertained in and by the following statement:—

My invention relates to an improved binocular of high power and small bulk. In those binoculars in which the optical axis is displaced laterally and doubled back on itself by prisms so as to reduce the length, the breadth is so great as to render the instrument cumbersome and inconvenient for carrying in the pocket.

The usual symmetrical arrangement of the eye-pieces and objectives involves a vacant space being left between the barrels, and my invention consists of a binocular in which the position of the eye-pieces and objectives is such that this space is so utilized as to considerably reduce the breadth of the instrument.

I attain this result by making the two barrels or portions of the instrument not symmetrical but identical in arrangement, the eye-pieces and objectives being diagonally arranged in the same direction or towards the same side in both parts so that the two parts are brought quite close together and the breadth of the instrument is to that extent reduced.

My invention is illustrated in the drawings accompanying my Provisional Specification wherein Figure 1 represents a part sectional view of a binocular

so arranged. Figure 2 shows the inter-visual adjustment for the eye-pieces. Figure 3 is a section on line A B (Figure 1). Figure 4 is an external view. The same letters of reference denote like parts in the several figures.

The instrument comprises two exactly similar barrels or bodies *a* in each of which the eye-piece *b* and objective *c* are diagonally disposed with regard to each other, the lateral displacement of the objectives relatively to the eye-pieces being similar or towards the same side instead of being symmetrically opposite with regard to the centre line as in other binoculars in which the optical axis is displaced by prisms. Any suitable optical combination may be used, but it is preferred to employ the system of tetrahedrons forming the subject of previous Letters Patent No. 9805 of 1898.

The two bodies or barrels *a* may by this arrangement be brought close or nearly close together so as to permit of utilizing the space consequent on the interval between the eye-pieces. For the inter-visual adjustment of the eye-pieces the one barrel *a* has at each end rack bars *d*, d^1 fitted to slide in guides in the other barrel, the lateral adjustment being effected by turning a milled head *e* upon whose spindle is keyed a pinion *f* which gears with rack teeth *g* formed on the one member of the front rack bar *d*, and also with a pinion *h* mounted on a shaft *i*, upon whose opposite end is keyed a pinion *j* gearing with rack teeth *k* formed on the opposite member of the other guide bar d^1. The spindle *i* and milled head *e* are both mounted on the one barrel *a*, while the guide bars *d* d^1 are mounted upon the other barrel.

The eye-pieces may be focussed separately, or they may be focussed simultaneously by the rack motion shewn, in which case one of the eye-pieces may also be separately adjustable to compensate for focal difference of the two eyes.

It will be observed that in consequence of the relative positions of the eye-pieces and objectives the luminous rays are always parallel.

The form, dimensions and details of the instrument as well as the optical combination employed may be varied according to circumstances.

Having now particularly described and ascertained the nature of the said invention and in what manner the same is to be performed, I declare that what I claim is:—

A binocular having its barrels of similar form, in which the eye-pieces and objectives are diagonally arranged not in symmetrically opposite directions but in the same relative direction, so as to enable the two parts of the instrument to be closely juxtaposed and the breadth of the instrument to be reduced, substantially as hereinbefore described.

Dated this 21st day of September 1900.

A. M. & WM. CLARK,
Chartered Patent Agents, 53, Chancery Lane, London.

Redhill: Printed for Her Majesty's Stationery Office, by Malcomson & Co., Ltd.—1900.